



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,579	08/23/2001	Yoshiharu Maeno	Q65960	7887

7590 04/06/2005

SUGHRUE, MION, ZINN, MACPEAK & SEAS  
2100 Pennsylvania Avenue, N.W.  
Washington, DC 20037

EXAMINER
----------

PAYNE, DAVID C

ART UNIT	PAPER NUMBER
----------	--------------

2633

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/934,579

Applicant(s)

MAENO, YOSHIHARU

Examiner

David C. Payne

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/27/2001.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Response to Arguments*

2. Applicant's arguments filed 17 June 2004 have been fully considered but they are not persuasive.
3. The applicant's arguments regarding which labels to use are not a convincing argument and should have been clear to the applicant. The label #1 in Figure 16A as applicant has pointed out **clearly** and **unambiguously** identifies the item that the examiner was referring to in the rejection as the reconfiguration means. However, the examiner has added additional descriptive language to assist the applicant in referencing the prior art. Furthermore, an 8X8 switch is extremely well known to those of skill in the art as a reconfigurable item in general and in the specific context of use in the McMillen reference.
4. Regarding the reference use of Figure 1A in its entirety. The examiner is referring to any of the optical transceivers (optical xcvs) in Figure 1A. Based on the argument's addressed to this point, the Applicant has not shown a lack of anticipation of the McMillen reference.
5. Applicant's characterization of element 710 of Figure 11 is incorrect and not in anyway substantiated by the citation indicated by the applicant nor anywhere else in the document. The servo module that the applicant is referring to in Figure 11 is element

Art Unit: 2633

**750** not 710. The line processing element (710 of Figure 11) as correctly indicated by the examiner is described in col./line: 10/65-67, 11/1 "Herein, the first processing unit 710 may perform a number of operations based on the electrical control signals such as threshold crossing, LOS integration, input/output power ratio analysis and the like."

6. Furthermore, after a careful review of the applicant's original claims, the amended claim 1 does indeed change the scope of claim 1. The original claim 1, claimed that reconfiguration equipment was capable *inter alia* of switching either to **other line processing equipment** or to said output lines. This would be a different architecture than switching **back to said line processing equipment** as in a loop fashion. However, conceding that the applicant views those two as the same by their admission. The examiner submits that 'other line processing equipment' as originally claimed is an obvious modification to the current claimed language of 'back to said line processing equipment.' Therefore, one of ordinary skill in the art would think it obvious that 'other' line processing components on the same card could be integrated and serve as the same line processing card. In this event, a route to an 'other' line processing equipment is equivalent to routing 'back to said' line processing equipment.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2633

2. Claims 1-5 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McMillen et al. US 5,321,813 (McMillen).

Re claims 1 and 17, McMillen disclosed

A line processing equipment comprising: at least one line processing means (optical xcvr - Fig. 1A) for processing respective lines; and line connection reconfiguration means (#1 of element 16 of Fig. 6A) to set up and reconfigure connections from input lines (input lines into element #2 of element 16 of Fig. 6A) coming into said line processing equipment to either said line processing means or output lines (output lines out of element #1 of Fig. 6A) going out of said line processing equipment and connections from said line processing means to either other line processing means (other optical xcvs of Fig. 1A) necessary subsequently to said line processing means or said output lines.

McMillen does not disclose that the switched connections a back to the same or 'said' line processing equipment. However, McMillen does disclose that the reconfiguration can route signals to an 'other' line processing equipment. If these two line functions were integrated into the same element, then the McMillen reference would constituted routing back to the same line processing equipment as claimed. It would have been obvious to one of ordinary skill in the art at the time of invention to integrate the separate line processing means so as to reduce the footprint space on a line card.

Re claim 2, McMillen disclosed

wherein said line connection reconfiguration means includes a plurality of input terminals (e.g., col./line: 13/40-65) and a plurality of output terminals (e.g., col./line: 13/40-65) and sets up arbitrary connections between said input terminals and said output terminals and reconfigures said connections (1 of Fig. 6A); and wherein said

Art Unit: 2633

input lines and outputs of said line processing means (12 of Fig. 1A, Fig. 4A) are connected to said input terminals respectively and said output terminals are connected to inputs of said line processing means and said output lines respectively (12 of Fig. 1A, Fig. 4C).

Re claim 3, McMillen disclosed

wherein said line connection reconfiguration means has a redundant structure (Fig. 22A) consisting of a plurality of element line connection reconfiguration means cascaded serially (Fig. 8B) so that any one of said element line connection reconfiguration means can set up and reconfigure said connections.

Re claims 4 and 5, McMillen disclosed

wherein said line connection reconfiguration means includes a connector plug array board (Type C boards Fig. 18, see also col./line: 14/35-65) having one surface onto which said input lines and outputs of said line processing means are connected through respective connectors and the other surface onto which said output lines and inputs of said line processing means are connected through respective connectors

McMillen does not disclose automatic mechanism manipulating insertion and pulling of said connectors on at least one of said one and the other surfaces according to setup and reconfiguration of said connections. However it would have been obvious to one of ordinary skill in the art at the time of invention to automate the removal an insertion of connectors to save the cost and time of human labor. Furthermore lacking any criticality, to make prior parts/or methods automatic does not make the claimed invention patentable over that prior art.

Art Unit: 2633

3. Claims 1-3, 15-18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswami et al. US 6,650,803 B1 (Ramaswami).

Re claims 1 and 17, Ramaswami disclosed

A line processing equipment comprising: at least one line processing means (Fig. 8, 710 of Fig. 11) for processing respective lines; and line connection reconfiguration means (240 of Fig. 12) to set up and reconfigure connections from input lines (215 of Fig. 12) coming into said line processing equipment to either said line processing means or output lines (215 of Fig. 12) going out of said line processing equipment and connections from said line processing means to either other line processing means (Fig. 8, 710 of Fig. 11) necessary subsequently to said line processing means or said output lines.

Ramaswami does not disclose that the switched connections a back to the same or 'said' line processing equipment. However, Ramaswami does disclose that the reconfiguration can route signals to an 'other' line processing equipment. If these two line functions were integrated into the same element, then the Ramaswami reference would constituted routing back to the same line processing equipment as claimed. It would have been obvious to one of ordinary skill in the art at the time of invention to integrate the separate line processing means so as to reduce the footprint space on a line card.

Re claim 3, Ramaswami disclosed

wherein said line connection reconfiguration means has a redundant structure (Fig. 19D) consisting of a plurality of element line connection reconfiguration means cascaded serially so that any one of said element line connection reconfiguration means can set up

Art Unit: 2633

and reconfigure said connections.

Re claim 15, Ramaswami disclosed

wherein at least one of said line processing means is a circuit for monitoring optical signal quality (1905 of Figure 19a) of said optical signals.

Re claim 16, Ramaswami disclosed

wherein at least one of said line-processing means is a circuit for generating test patterns and inserting said test patterns into said optical signals (e.g., col./line: 30/8-22).

Re claims 18, 20 and 21, Ramaswami disclosed

wherein said line connection reconfiguration means sets up and reconfigures said connections between said input optical fiber lines, inputs and outputs of said line switch and said output optical fiber lines, and configures working lines and backup lines; and wherein said line switch carries out protection switching from said working lines to said backup lines when a failure occurs on said working lines (e.g., col./line: 22/49-67).

4. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over McMillen et al. US 5,321,813 (McMillen) in view of Macera et al. US 5,490,252 (Macera).

Re claims 6-9, McMillen disclosed the aforementioned apparatus but does not disclose wherein said input lines and said output lines are optical fiber lines which transmit packet multiplexed, time division multiplexed (TDM) and/or wavelength division



Art Unit: 2633

multiplexed optical signals. Macera disclose both packet (see Macera, 78 of Fig. 3) and TDM processing equipment (see Macera, 84 of Fig. 3) connected to an interconnection system. It would have been obvious to one of ordinary skill in the art at the time of invention to attach packet and/or TDM processing equipment to reconfiguration boards or switches since these are widely used data communication formats used in modern reconfigurable networks.

5. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over McMillen et al. US 5,321,813 (McMillen) in view of Lauder et al. US 2002/013585 A1 (Lauder).

Re claim 10, McMillen does not disclose

wherein at least one of said line processing means is a wavelength demultiplexer for demultiplexing said wavelength division multiplexed optical signals into a plurality of optical signals. Lauder disclosed multiplexing line processing equipment (see Lauder 504 of Fig. 5) attached to the reconfiguration means. It would have been obvious to one of ordinary skill in the art at the time of invention to attach multiplexing line processing equipment to reconfiguration boards or switches since these are widely used means of increasing transmission capacity in modern reconfigurable networks.

Re claims 11-13, McMillen does not disclose waveband multiplexing. However, it would have been obvious to one of ordinary skill in the art at the time of invention that waveband multiplexing is merely the aggregate grouping of wavelengths and does not constitute a patentable invention over the prior art.

6. Claims 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswami et al. US 6,650,803 B1 (Ramaswami) in view of Ikoma et al. US 2002/0097460 A1 (Ikoma).

Re claim 14 Ramaswami does not disclose

wherein at least one of said line processing means is a wavelength converter for said optical signals. However Ikoma disclosed a wavelength converter (see Ikoma, (1-1-2) of Fig. 4) in the line processing equipment. It would have been obvious to one of ordinary skill in the art at the time of invention to use a transponder on the line processing equipment to either change the client wavelength over to the service wavelength or move a client away from a wavelength where signal quality has deteriorated (see e.g., p. 1 par. 0009).

Re claim 19 Ramaswami does not disclose

wherein a plurality of said line processing equipment are interconnected to form a network; and wherein said line switch carries out protection switching from working lines to said backup lines in a shared ring protection scheme. Ikoma disclosed using his line processing equipment in a share ring configuration (see Fig. 4). It would have been obvious to one of ordinary skill in the art at the time of invention to use shared rings for redundancy and higher service availability in the event of network or equipment failure.

### ***Conclusion***

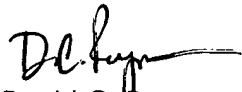
Art Unit: 2633

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (571) 272-3024. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp



David C. Payne  
Patent Examiner  
AU 2633